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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/538,938   | 01/09/2006  | Karel H Leffelaar    | TS6587/US           | 5839             |
| 36522 7590 07/13/2009<br>KRATON POLYMERS U.S. LLC<br>16400 Park Row<br>HOUSTON, TX 77084 |             |                      |                     |                  |
| EXAMINER<br>DUCHENEAUX, FRANK D  |             |                      |                     |                  |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
| 1794   |             |                      |                     |                  |
| NOTIFICATION DATE  |             | DELIVERY MODE        |                     |                  |
| 07/13/2009   |             | ELECTRONIC           |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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kratonip@kraton.com

**Attachment to Advisory Action**

1. Applicant's arguments filed 6/24/2009 have been fully considered but they are not persuasive. The examiner's complete response to applicants' arguments is outlined below.

**Examiner's Note**

On page 2 of applicants' arguments, under the applicants' response section heading, applicants have annotated that previous rejections in the Office action dated 4/24/2009 were under 35 U.S.C 102. The examiner notes that rejection of claims 25 and 33-34 were made under 35 U.S.C 103. On page 2 of applicants' arguments, applicant's misstate a range of 20,000 to 80,000~~0~~. The examiner notes that the correct range is 20,000 to 80,000 as recited on page 4 of the Office Action dated 4/24/2009.

**End of Examiner's Notes**

Applicants have attempted to disqualify the Lechat et al. reference (WO 02/00806 A2) as failing to disclose, teach or suggest an SISI block copolymer where an end isoprene (I) block is smaller than a middle (I) block and that the underlying premise of the Lechat reference is that the end (I) block is always (emphasis added) larger than the middle (I) block. Applicants also submit that Lechat does not disclose any (emphasis added) ranges which overlap those of the present claims and that the Lechat reference teaches away from the claimed invention. In support of these arguments, applicants cite a passage from Lechat, wherein Lechat states that

polymers with internal blocks having a molecular weight (Mw) less than the end block are particularly useful.

The examiner notes that, on pages 7 and 8, Lechat states that “the required properties of the invention rubbers control the selection of the copolymer blocks molecular weights,” that “unsaturated diene blocks with molecular weight greater than 10,000 typically provide stronger polymers with good shear properties. Unsaturated diene blocks with molecular weight under 200,000 are typically processed more easily” and that when SISI polymers are used, “the molecular weight of the two unsaturated diene blocks can be varied.” Restated here for convenience, page 5, lines 12-15 of the Office Action dated 4/24/2009 recites ranges as provided by Lechat for the Mw for the SISI tetrablock copolymer (51,000 – 270,000); that for the styrene blocks (8,000-20,000) and the isoprene blocks (15,000-150,000 or 20,000-80,000); and that for the SI (23,000 – 170,000) and SIS (31,000-190,000) intermediates encompass the molecular weight ranges as claimed by applicant ( $SISI_{mw} = 205,000-225,000$ ;  $S_{mw} = 10,000-12,000$ ;  $SI_{mw} = 130,000-185,000$ ;  $SIS_{mw} = 145,000-195,000$ ; and  $SIS_{mw} = 147,000$  to  $193,000$  and  $SI_{mw} = 135,000$  to  $184,000$  (new claim 33); and middle  $I_{mw} = 125,000$  to  $172,000$  and terminal  $I_{mw} = 22,000$  to  $64,000$  (new claim 34)). Further, while Lechat teaches that polymers with internal (I) blocks having a molecular weight less than the end block are “particularly useful,” Lechat does not exclude or teach against the use of other polymers wherein the internal blocks have a molecular weight greater than the end blocks as presently claimed. This phrase only indicates the particular usefulness of one type of polymer; it does not indicate that other polymers within the scope of

the reference, including those presently claimed, are not useful. Therefore, it is clear that the molecular weight ranges of Lechat overlap those presently claimed.

As set forth in MPEP 2144.05, in the case where the claimed range “overlap or lie inside ranges disclosed by the prior art”, a *prima facie* case of obviousness exists, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a *prima facie* case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

Applicants’ arguments continue with a citation from Lechat which states, “Some (emphasis added) invention copolymers have an internal unsaturated block with a molecular weight in the range 20,000 to 70,000, alternatively 25,000 to 50,000 and the external block has a molecular weight above 40,000, alternatively above 60,000, when it is a B block, and above 55,000, alternatively above 75,000, when it is an I block,” and that the examiner urges said ranges. From this passage, it is the applicants’ contention that the reference intends for said

internal (I) ranges to commensurately provide external (I) values larger than the internal (I) values when the reference is read in accordance with the entire disclosure and teaching of the reference.

The examiner notes that the reference provides the above-cited passage and it is not the examiner's position to urge nor contend that said passage represents the entire disclosure of said reference. Instead, Lechat merely states that some of invention copolymers possess the Mw distribution as cited by the applicants, which denotes that not all of the invention copolymers necessarily do. In addition, Lechat's disclosure that copolymers with such a Mw distribution are particularly useful does not negate the utility of copolymers comprising distributions different from said distributions. In addition, a fair reading of the reference as a whole clearly provides values for the Mw of the external and internal (I) blocks that overlap, and therefore render obvious those presently claimed. Further, it is noted that with respect to page 8 of Lechat cited by applicants, even in a preferred embodiment, given that the interior (I) block has a Mw of 20,000 to 70,000 and the exterior (I) block has a Mw of greater than 55,000, embodiments are included where the Mw of the exterior (I) block is smaller than the Mw of the interior (I) block, i.e. for instance when interior (I) block has a Mw of 70,000 and the exterior (I) block has a Mw of 60,000 and as such, and in light of the full Mw ranges for both of the (S) and both of the (I) blocks stated previously, it would have been obvious to one of ordinary skill in art at the time of the invention to provide interior and exterior (I) blocks that anticipate the ranges as presently claimed. Further, "nonpreferred disclosures can be used. A nonpreferred portion of a reference

disclosure is just as significant as the preferred portion in assessing the patentability of claims.”

In re Nehrenberg, 280 F.2d 161, 126 USPQ 383 (CCPA 1960).

Applicants’ further argue, via citations of examples from the reference, that Lechat disclosure is limited only to SISI block copolymers having only external (I) blocks with a Mw larger than the internal (I) block, and citation of MPEP 2143.01 (III) to contend that modification of the Lechat reference would not have been obvious to one of ordinary skill in the art towards an SISI block copolymer as presently claimed.

However, “applicant must look to the whole reference for what it teaches. Applicant cannot merely rely on the examples and argue that the reference did not teach others.” (In re Courtwright, 377 F.2d 647, 153 USPQ 735,739 (CCPA 1967)).

The examiner maintains the position that, while the Lechat reference discloses that polymers in which the internal (I) block has Mw less than the end block are particularly useful and provides examples to this end, the reference discloses ranges permitting for (I) blocks having the presently claimed ranges. In fact, Lechat clearly states that “The following examples illustrate, but do not limit the invention (page 16, line 1).” Also, MPEP 2143.01 (III) recites, “If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her

skill.”). It is the examiner’s position that the Lechat reference provides for an SISI block copolymer with the block Mw ranges as presently claimed and that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the SISI block copolymer with internal (I) block of a greater Mw than the external (I) blocks to provide said block copolymer with predictable results and further, that such a modification would have been recognizable and within the skill and knowledge of one of ordinary skill in the art.

On page 5, applicants further argue that nowhere in the Lechat reference is it “contemplated” or “even hinted” that the external (I) block should be other than larger than the internal (I) block and that, even in the case of overlapping ranges, the reference teaches against such a modification (MPEP 2144.05 (III)) and that a person of ordinary skill would be led in a direction divergent from the present invention.

The examiner respectfully disagrees with the applicants’ assertion that Lechat fails to “even hint” at the SISI block copolymer of the present invention and that the reference teaches against such a modification. Lechat recites that the Mw of the two unsaturated diene blocks can be varied, which would certainly provide one of ordinary skill in the art with a hint of providing the internal (I) block with a molecular weight greater than that of an exterior (I) block and nowhere within the disclosure does Lechat disclose that such a configuration would in anyway be detrimental to the invention. Also MPEP 2144.05 (III) recites, “Applicants can rebut a prima facie case of obviousness based on overlapping ranges by showing the criticality of the claimed range. “The law is replete with cases in which the difference between the claimed invention and

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the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.” In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). It is noted that the applicants have not shown, nor in any manner discussed, the criticality of the currently claimed ranges over the prior art of record.

/FRANK D DUCHENEAUX/

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/Callie E. Shosho/

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